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2 March 1964

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Subject: Periodic Report #8 (12/1/63 - 1/30/64)
Liaison and Consultation

This report covers the fifteenth and sixteenth months of continuous contact with your installation. During this report period eleven man days of consultation were provided.

Considerable progress was realized, motivated largely by PSD management and sustained by PSD personnel initiative and effort.

I. Programs

A. Instrumentation-Mechanization

1. The arrival of several MacBeth Quantalog Meters provides the capability of instrument indicated exposure control on all types of enlargers. These instruments had previously demonstrated their value on the Chromega Color Enlargers and the 10-20-40X Enlargers. These instruments were calibrated by Quality Control and made available for use by production personnel.

2. Photo Lab personnel have successfully processed large sheets of continuous tone films and also reflection prints made on Cronapaque through the Kodalith processor. While this, in itself, does not constitute a new program, it does represent a significant step in the direction of mechanized processing. Perhaps the most important aspect is the fact this is now "their Program", which we can help them improve or perfect.

B. Color Reproduction

1. A color H&D master, complete with a spectrum of color patches as well as a calibrated grey scale, was

made up and supplied to the Color Section of the Photo Lab.

As the color reproduction program evolves, we will be interested not only in density and contrast, but also in the parameters "color balance", saturation, purity, and hue.

2. Measurements were made of the color temperature and intensity of light used in product readout equipment. This information will be of value in establishing optimum color balance and density of color duplicates supplied to or generated within your installation.

3. A joint effort of the Photo Lab and the Reproduction and Printing Branches produced the first color picture using color lithography. This milestone was noteworthly because it was accomplished without direct technical assistance - other than previous training of a few key personnel at E.K.Co.

C. Quality Control

We spent little time on this program during the report period.

II. Equipment

A. The color Lab personnel were able to approximately quadruple the processing capacity of 3 color materials by utilizing tanks and other equipment on hand. This should take some of the pressure off selecting production color processing equipment until we have more information on the best color system for your installation.

III. Materials

No new materials were introduced during this report period.

IV. Training

A. Instruction was given to four Photo Lab employees on how to generate an exposure guide or "Printing Schedule." The

technique taught was designed for use with the Niagara Printer, but is sufficiently basic to be applicable for any combination of printer - sensitized material - process. As part of the training, the employees performed the testing, took the data, and actually created a "Printing Schedule" for the system combination of Niagara Printer - duplicating emulsion #8430 - Versamat Type B process.

B. Illustrative material was generated and a verbal presentation given to Photo Lab supervision on a few of the problems inherent in color photographic duplication systems.

V. Miscellaneous

A. A verbal report was made to the Reproduction and Printing Branch supervision on the status of current color lithographic systems. In summary, it consisted of the following:

1. The best quality can be achieved via the straight photographic technique up to the point of making the printing plates.

2. The best day in - day out quality (average level) is probably being produced by the P.D.I. system which makes an initial electronic scan of the color transparency and then uses photographic material in the intermediate steps leading up to the printing plates.

3. The Kleisograph machine process, which uses electronic scan and mechanical plate production, is "competitive" with the two techniques mentioned above. However, operator "know-how" and experience is required for best results and the process is not as rapid as literature would lead one to believe.

B. A white sludge which formed in one of the fixing solution recirculation systems was taken to E.K.Co. for analysis. Spectrographic and defraction x-ray analysis were performed. What the sludge material is has been reported; why the sludge formed has not yet been determined.

C. Considerable time was spent in analyzing sensitometric and densitometric data on color materials. While this is time consuming and produces little tangible evidence of accomplishment, we feel management deserves the most technically correct recommendations which we can supply.

We continue to enjoy the fullest cooperation of all the people contacted in your organization.

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